UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,793	10/26/2001	Raj Nair	2207/12116	6063

26646 7590 09/09/2004

KENYON & KENYON
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER	
PATEL, RAJNIKANT B	
ART UNIT	**PAPER NUMBER**
2838	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/016,793	NAIR ET AL.	
	Examiner	Art Unit	
	Rajnikant B Patel	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/9/04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/26/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Response to Arguments

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,5 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Patel et al. (U.S. Patent # 6,366,467B1).

Patel et al. disclose claimed invention a voltage regulation module for integrated circuit (figures 3-7 and 9-12), an interpose regulator (column 3, line 30-65), the integrated

circuit die and being stacked (column 4, line 35-45). A linear regulator (column 1, line 10-50),

3. Claims 1,5 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Klughart (U.S. Patent # 6,396,137 B1).

Klughart discloses claimed invention a voltage regulation module for integrated circuit (figures 1,26 and 35-42), interpose regulator (figure 1, item 0102), the integrated circuit die and being stacked (column 9, line 30-40). A linear regulator (column 36, line 30-50),

4. Claims 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Peters et al. (U.S. Patent # 6,521,530 B2).

Peters et al. disclose the claimed invention (figures 14-34), including a power supply (column 20, line 15-35), an interposer (Column 19, 35-45), a vias (column 4, line 55-70), an array (column 13, line 20-35).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-4,6-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (U.S. Patent # 6,366,467) in combination with Li et al. (U.S. Patent # 6.264475).

Patel et al. discloses claimed invention as explained in the claims 1,5 and 14 above, except the utilization of the technique for the interposer layer is thinned to enable wire through. Li et al. teaches the utilization of similar the technique for the interposer layer is thinned to enable wire through (figures 3a-e and 4). It would have been obvious one having an ordinary skill in the art at the time the invention was modify Patel et al.'s integrated circuit by technique taught by Li et al. for the purpose of providing an improved integrated circuit of voltage regulator module which will increase reliability and efficiency of the module.

7. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (U.S. Patent # 6,262,905) in combination with Ference et al. (U.S. Patent # 6,137,164).

Zhang et al. disclose the claimed voltage regulation system (figure 1), including a power supply. However Zhang et al. does not disclose the utilization of technique for a substrate coupled to the power supply an interposer situated between the substrate and the regulated voltage, integrated die are bonded in a flip-chip fashion, with short solder ball element and voltage regulator elements. Ference et al. teaching the similar technique for a substrate coupled to the power supply an interposer situated between the substrate and the regulated voltage, integrated die are bonded in a flip-chip fashion,

with short solder ball element and voltage regulator elements.). It would have been obvious one having an ordinary skill in the art at the time the invention was modify Zhang et al.'s integrated circuit by technique taught by Ference et al. for the purpose of increasing reliability and efficiency of the module.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rajnikant B Patel whose telephone number is 571-272-2082 The examiner can normally be reached on 6.30-5.00; m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rajnikant B Patel
Primary Examiner
Art Unit 2838

***